ORIGINAL

0000127228

BEFORE THE ARIZONA CORPORATION COMMISSION

RECEIVED

2011 JUN 30 P 3:42

AZ CORP COMMISSION
DOCKET CONTROL

Arizona Corporation Commission
DOCKETED

JUN 30 2011

DOCKETED BY

COMMISSIONERS
GARY PIERCE - CHAIRMAN
BOB STUMP
SANDRA D. KENNEDY
PAUL NEWMAN
BRENDA BURNS

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2011-2012 ENERGY EFFICIENCY IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-11-0055 **NOTICE OF FILING**

Tucson Electric Power Company hereby submits a Supplement to its 2012 Electric Energy Efficiency Plan. This Supplement was prepared in accordance with Decision No. 72028.

RESPECTFULLY SUBMITTED this 30th day of June 2011.

Tucson Electric Power Company

By _____

Michael W. Patten
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004

and

Phillip J. Dion
Melody Gilkey
Tucson Electric Power Company
One South Church Avenue, Suite 200
Tucson, Arizona 85701

Attorneys for Tucson Electric Power Company

Original and 13 copies of the foregoing filed this 30th day of June 2011 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copy of the foregoing hand-delivered/mailed this 30th day of June 2011 to:

Brian Bozzo
Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

By Mary Ippoliti

Supplement to Tucson Electric Power Company's

2012 Electric Energy Efficiency Plan

Impact of Estimated External SO_2, NO_X, PM_{10} and Water Costs

In Decision No. 72028 (December 10, 2010), the Arizona Corporation Commission ("Commission") ordered that "Tucson Electric Power Company shall work with stakeholders to develop appropriate metrics and monetize costs for water, Sox, PM10, and Nox emissions savings as part of the societal cost test as a supplement to its 2012 Energy Efficiency Implementation plan, but no later than July 1, 2011." In compliance with Decision No. 72028, Tucson Electric Power Company ("TEP") jointly participated with Arizona Public Service Company ("APS") and UNS Electric, Inc. ("UNS Electric") in an extended stakeholder meeting on externalities on February 24, 2011. At the meeting, interested parties from across Arizona discussed the estimated financial impacts of sulfur dioxide ("SO_2"), particulate matter ("PM_{10}"), nitrogen oxide ("NO_X") and water usage on the environment.

With respect to estimated SO_2, NO_X and PM_{10} impacts, the consensus was to use the comprehensive and current findings in the "Hidden Costs of Energy" report ("Report") by the National Academies of Sciences' National Research Council ("NRC"). The group identified several benefits to using this Report rather than generating an original one, including: (1) that the Report is based on research and conclusions that use clearly defined sources with a long list of external reviews; (2) that the Report utilized the same concentration response function and a similar value for statistical life as used by the Environmental Protection Agency ("EPA"); and (3) that the Report presented societal costs specific to power plants operated in both Arizona and New Mexico.

With respect to water usage, the consensus was to estimate the avoided cost of water as an opportunity cost of $666 per acre foot in 2010 dollars.

Table 1 sets forth the estimated external costs from the Report specific to TEP's resources along with the similar plants chosen to reflect TEP's resources not included in the Report.[1]

---

[1] The Report did not include emission cost details for TEP's Sundt Generating Station *gas* steam units or the Luna Energy Facility, which was built in 2006. Proxies were selected for the externality costs of units with similar operating characteristics to those not included in the

Table 1

Fuel	OPR NAME	FACILITY NAME	$/Ton of SO_2	$/Ton of NO_X	$/Ton of PM_{10}	$/MWh of SO_2	$/MWh of NO_X	$/MWh of PM_{10}
Coal	APS	Four Corners	2,717	1,127	167	2.19	3.02	0.06
Coal	Public Service Co of NM	San Juan	2,767	1,161	166	3.70	2.51	0.03
Coal	SRP	Navajo	2,767	1,059	158	0.64	2.07	0.04
Coal	TEP	H Wilson Sundt Generating Station	2,322	1,280	191	11.06	2.86	0.03
Coal	TEP	Springerville	3,058	1,193	177	5.42	1.29	0.03
Gas	APS	Ocotillo (Proxy for Sundt on Natural Gas)	7,907	4,914	1,165	0.03	3.28	0.02
Gas	Calpine	South Point Energy Center (Proxy for Luna Energy Facility)	1,855	597	179	0.00	0.03	0.00

The plant-specific details in the Report – and the estimated opportunity cost of water – were used to determine the estimated avoided future year external environmental cost of SO_2, PM_{10} , NO_X and water usage based on TEP's planned generation portfolio, annually, based on a dollar per megawatt hour ("MWh") basis. Table 2 sets forth those estimated annual costs for the period 2011 through 2020.

Table 2

$/MWh (Nominal)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SO_2	2.32	2.36	2.43	2.47	2.50	2.62	2.72	2.77	2.82	2.90
H_2O	1.21	1.24	1.26	1.29	1.31	1.35	1.38	1.38	1.41	1.44
NO_X	1.94	1.92	1.95	2.01	2.06	1.51	1.51	1.36	1.37	1.41
PM_{10}	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total	5.49	5.53	5.66	5.78	5.88	5.49	5.62	5.52	5.61	5.76

TEP's Electric Energy Efficiency Implementation Plan ("EE Plan") for 2012 (filed on January 31, 2011) did not include an analysis of the impact of these estimated costs in assessing

---

Report. Adjustments were also made to account for environmental controls that have been installed since 2005 and for future years for plants requiring additional controls. Finally, it should be noted that although the Report reflected results with Sundt Generating Station Unit 4 operating on *coal*, TEP's current Integrated Resource Plan ("IRP") has Sundt Generation Station operating on natural gas.

the proposed programs. Table 3 sets forth 2012 Program Cost Details and Cost Effectiveness for all programs filed in the 2012 EE Plan both with and without the estimated values identified in this Supplement. As Table 3 demonstrates, the results of the Societal Cost Test shows little to no change for each program when accounting for the avoided estimated external costs of SO_2, NO_X, PM_{10} and water usage.

Table 3

		Results with Externalities		Filed Implementation Plan Results	
2012 Program Cost Details and Cost Effectiveness		Lifetime Net Benefits ($)	Program Level Societal Cost Test	Lifetime Net Benefits ($)	Program Level Societal Cost Test
Residential	Efficient Products	$12,973,453	4.3	$12,308,341	4.1
	Appliance Recycling	$1,342,968	2.0	$1,236,270	1.9
	Res. New Construction	$4,525,799	1.7	$4,332,460	1.7
	Existing Homes and Audit Direct Install	$1,053,168	1.2	$849,664	1.2
	Shade Tree	$493,483	1.6	$416,325	1.5
	Low Income Weatherization	$97,452	1.2	$84,875	1.2
	Multi-Family	$277,695	2.6	$260,777	2.5
	Residential Direct Load Control - Pilot	$657,716	5.5	$657,716	5.5
	Subtotal	**$21,421,733**	**2.2**	**$20,146,429**	**2.1**
Commercial	C&I Comprehensive Program	$21,067,067	3.6	$20,050,503	3.5
	Commercial Direct Load Control	$12,748,060	10.8	$12,748,060	10.8
	Small Business Direct Install	$9,915,227	2.7	$9,378,490	2.6
	Commercial New Construction	$1,890,056	5.8	$1,810,109	5.6
	Bid for Efficiency - Pilot	$831,503	2.4	$775,882	2.3
	Retro-Commissioning	$444,448	3.1	$419,165	3.0
	Schools Facilities	$361,093	3.3	$341,881	3.2
	CHP Joint Program - Pilot	$8,032,612	8.2	$7,718,749	7.9
	Subtotal	**$55,290,066**	**4.1**	**$53,242,839**	**4.0**
Behavior	Home Energy Reports	$97,351	1.2	$53,980	1.1
	Behavioral Comprehensive Program	$2,266,605	2.6	$2,129,394	2.5
	Subtotal	**$2,363,956**	**2.1**	**$2,183,375**	**2.0**
Support Programs	Education and Outreach*	$0	N/A	$0	N/A
	Residential Energy Financing*	$0	N/A	$0	N/A
	Codes Support*	$0	N/A	$0	N/A
	Program Development, Analysis and Reporting Software	-$829,395	N/A	-$829,395	N/A
	Subtotal	**-$829,395**	**N/A**	**-$829,395**	**N/A**
	Total	**$78,246,360**	**3.0**	**$74,743,247**	**2.9**